

What is claimed is:

1. Seed of soybean variety XB55K04, representative seed of said soybean variety XB55K04 having been deposited under ATCC Accession No. \_\_\_\_\_.  
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2. A soybean plant, or a part thereof, produced by growing the seed of claim 1.
3. The soybean plant part of claim 2 wherein said part is pollen.
- 10 4. The soybean plant part of claim 2 wherein said part is an ovule.
5. A tissue culture of protoplasts or regenerable cells from the plant of claim 2.
- 15 6. A tissue culture according to claim 5, wherein cells or protoplasts of the tissue culture are obtained from plant tissue selected from the group consisting of: leaf, pollen, cotyledon, hypocotyl, embryos, root, pod, flower, shoot and stem.
- 20 7. A soybean plant regenerated from the tissue culture of claim 5 and having all the morphological and physiological characteristics of soybean variety XB55K04, representative seed of said soybean variety XB55K04 having been deposited under ATCC Accession No. \_\_\_\_\_.  
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8. A method for producing a progeny soybean plant comprising:  
crossing the plant of claim 2 with a different soybean plant,  
harvesting the resultant soybean seed, and  
growing a soybean plant.